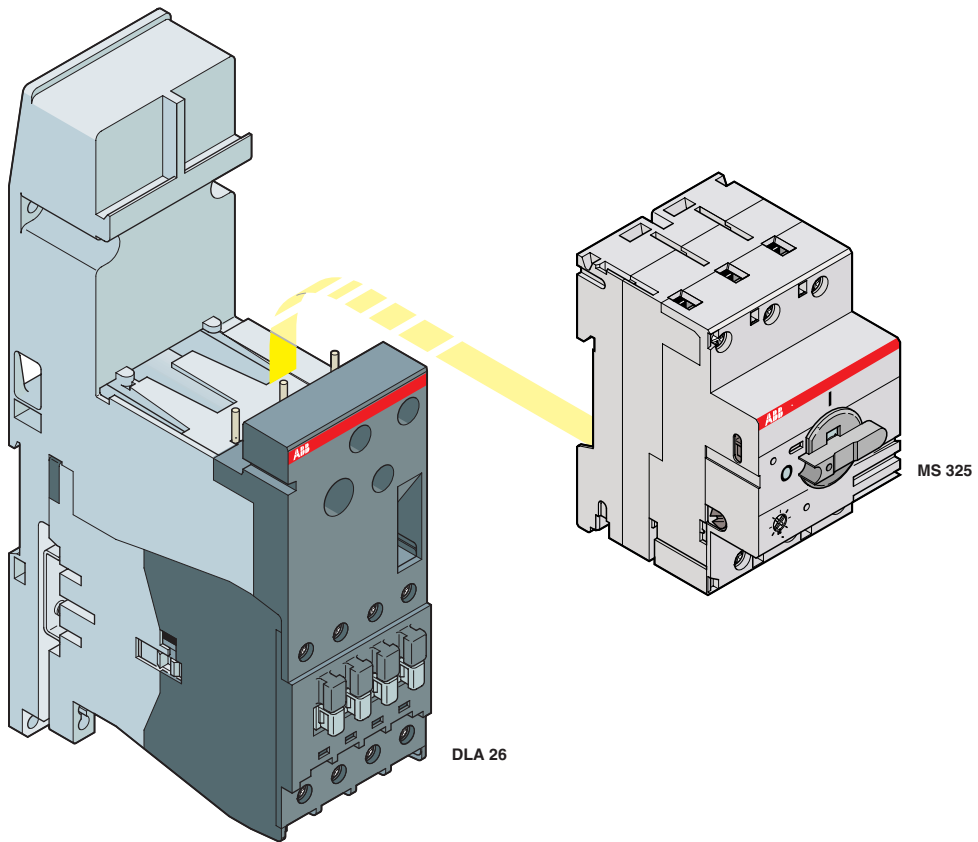
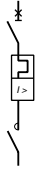


D.O.L. Starters Open Type Version with Base for Manual Motor Starter



DLA... version

E0717D1

DLA

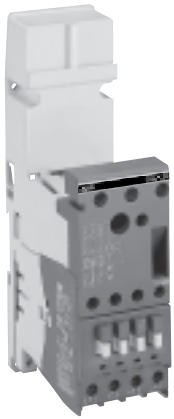
D.O.L. Starters, Open Type Version

with Base for Manual Motor Starter



MS 325

SB7694S3



DLA 26

SB7694S2

General information

DLA direct-on-line starters are mounted on a base suitable for fitting of a manual motor starter type **MS 325**, for overload and short-circuit protection.

Please refer to table on page 5/2 for selection of the required type of coordination.

The advantages in utilization are as follow:

- starters clip onto 35 x 15 mm mounting rail (EN 50022),
- direct mounting of the **MS 325** manual motor starter and tightening of its terminal screws onto the connections that are built into the base,
- contactor coil terminals are accessible on the bottom part.

Application

Starters for controlling three-phase asynchronous motors:

- up to an operational voltage of 415 V - 50 or 60 Hz,
- for a starting time of 1.5 s max.
 - and a switching frequency ≤ 15 starts an hour with a load factor of 80 %
 - or ≤ 30 starts an hour with a load factor of 50 %,
- with an ambient temperature near the devices ≤ 50 °C,
- in compliance with standards EN 60947-4-1/IEC 947-4-1 and EN 60204-1/IEC 60204-1.

Coordination

In the event of a short-circuit, the combination starter, in addition to very high electrodynamic stresses, is subjected to thermal stresses proportional to short-circuit time.

The capacity to withstand these high stresses depends on the perfect coordination of the devices which make up the combination starter.

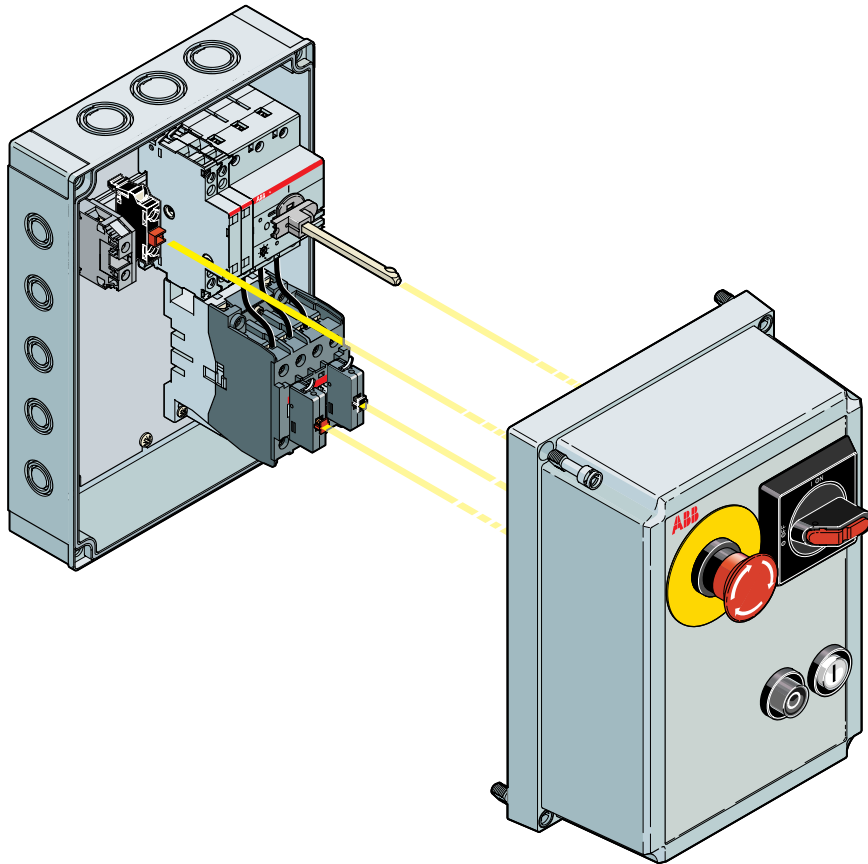
Standard EN 60947-4-1/IEC 947-4-1 defines two types of coordination according to the anticipated level of service continuity. The damage limits for the control gear are defined.

Type 1 : In the event of a short-circuit, the starter causes no danger to persons or facilities, and may not be able to function thereafter without repairs being made or parts being replaced.

Type 2 : In the event of a short-circuit, the starter causes no danger to persons or facilities, and should be able to function thereafter. The risk of contact welding does exist.

Enclosed D.O.L. Starters

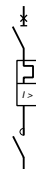
Protection by Associated Manual Motor Starter



E1349CD1

DRA ... DB+BU version

DRA ... D, DRA ... DB, DRA ... DB+BU Enclosed D.O.L. Starters Protection by Associated Manual Motor Starter



DRA 16-30 D



DRA 16-30 D



DRA 9-30 DB + BU

Application

- Starters for the control of three-phase asynchronous motors
- up to an operational voltage of 415 V, 50 or 60 Hz,
 - for a starting time of 1.5 s maximum,
and a switching frequency ≤ 15 starts/hour with a load factor of 80%
or ≤ 30 starts/hour with a load factor of 50%,
 - at an ambient temperature ≤ 40 °C around the enclosure,
 - in conformity with EN 60947-4-1/IEC 947-4-1 and EN 60204-1/IEC 60204-1 standards.

Description

Each starter is delivered assembled, cabled by us and contains:

- 1 MS 325 manual motor starter.
 - 1 three-pole contactor. Rating from 9 to 26 A AC-3.
 - 1 hold-in contact.
 - The control circuit.
 - 1 PE terminal for connection of the external protective conductor.
 - 1 enclosure equipped with:
 - 1 operating handle, padlockable in the rest position (3 padlocks), red on yellow front plate,
 - 1 white flush "I" ON pushbutton,
 - 1 black protruding "O" OFF pushbutton.
- The handle prevents the enclosure from opening when the manual motor starter is in the "working" position.

DRA ... D version

With the recommended wiring diagram, the control circuit is isolated by the manual motor starter. If operation is interrupted, press the "ON" pushbutton to restart.

Emergency stop actuated by manual motor starter handle. It operates a category 0 stop: "Stopping by immediate power removal to the machine actuators".

Reminder: The choice of the emergency stop category shall be determined according to the risk assessment of the machine (EN 60 204-1, § 9.2.5.4.2).

DRA ... DB version

380 ... 415 V - 50/60 Hz power circuit

- The manual motor starter is equipped with:
- an undervoltage coil,
 - auxiliary contacts to isolate the entire control circuit.

If supply is cut, the manual motor starter must be reset before pressing the "ON" pushbutton to restart.

Emergency stop actuated by manual motor starter handle. It operates a category 0 stop: "Stopping by immediate power removal to the machine actuators".

Reminder: The choice of the emergency stop category shall be determined according to the risk assessment of the machine (EN 60 204-1, § 9.2.5.4.2).

DRA ... DB + BU version

The enclosure is equipped with a 40mm \varnothing emergency stop mushroom headed button, with release by rotation, red on yellow front plate. This emergency stop mechanism activates the manual motor starter by means of the undervoltage coil. In this case the manual motor starter handle is black.

380 ... 415 V - 50/60 Hz power circuit

- The manual motor starter is equipped with:
- an undervoltage coil,
 - auxiliary contacts to isolate the entire control circuit.

If supply is cut, the manual motor starter must be reset before pressing the "ON" pushbutton to restart.

The emergency stop mushroom headed button, and the manual motor starter handle, operate a category 0 stop: "Stopping by immediate power removal to the machine actuators".

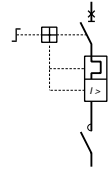
Reminder: The choice of the emergency stop category shall be determined according to the risk assessment of the machine (EN 60 204-1, § 9.2.5.4.2).

>> Technical data page 10/5

DRA ... D

Enclosed D.O.L. Starters

Protection by Associated Manual Motor Starter



DRA ... D ordering details

Co-ordination $I_q = 50 \text{ kA}$ and operational voltage $\leq 415 \text{ V}$

Power range 4-pole motor - 50/60 Hz 380 - 400 - 415 V		Co-ordination type $I_q = 50 \text{ kA}$	Setting range		Type	Order code	Weight in kg Packing 1 piece
kW	... kW		A	... A	State control voltage [] []	to be completed with control voltage code []	
2.2	... 2.5	1	4.0	... 6.3	DRA 9-30-D6.3 [] []	1SBK 140 522R8 [] 44	2.620
3.0	... 4.0	1	6.3	... 9.0	DRA 9-30-D9.0 [] []	1SBK 140 522R8 [] 45	2.620
5.0	... 5.5	1	9.0	... 12	DRA 12-30-D12.5 [] []	1SBK 160 522R8 [] 46	2.620
6.5	... 7.5	1	12.5	... 16	DRA 16-30-D16 [] []	1SBK 180 522R8 [] 47	2.620
0.37	... 0.55	2	1.0	... 1.6	DRA 9-30-D1.6 [] []	1SBK 140 522R8 [] 41	2.620
-	0.75	2	1.6	... 2.5	DRA 9-30-D2.5 [] []	1SBK 140 522R8 [] 42	2.620
1.1	... 1.5	2	2.5	... 4.0	DRA 9-30-D4.0 [] []	1SBK 140 522R8 [] 43	2.620
2.2	... 2.5	2	4.0	... 6.3	DRA 12-30-D6.3 [] []	1SBK 160 522R8 [] 44	2.620
3.0	... 4.0	2	6.3	... 9.0	DRA 26-30-D9.0 [] []	1SBK 240 522R8 [] 45	2.880
5.0	... 5.5	2	9.0	... 12.5	DRA 26-30-D12.5 [] []	1SBK 240 522R8 [] 46	2.880
6.5	... 7.5	2	12.5	... 16	DRA 26-30-D16 [] []	1SBK 240 522R8 [] 47	2.880
8.0	... 9.0	2	16.0	... 20.0	DRA 26-30-D20 [] []	1SBK 240 522R8 [] 48	2.880
-	11.0	2	20.0	... 25.0	DRA 26-30-D25 [] []	1SBK 240 522R8 [] 49	2.880

Control voltage code

Voltage		Code	Control circuit
V 50 Hz	V 60 Hz	8 []	
220 ... 230	230 ... 240	0	must be connected to the power circuit
230 ... 240	240 ... 260	8	either phase-to-phase or phase-to-neutral (1)
380 ... 400	400 ... 415	5	
400 ... 415	415 ... 440	6	

(1) Supply 1 HK 20 auxiliary contact block for neutral breaking
(see page 10/5)

DRA ... DB Enclosed D.O.L. Starters Protection by Associated Manual Motor Starter



DRA ... DB ordering details (380 ... 415 V - 50/60 Hz power circuit)

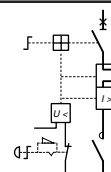
Co-ordination $I_q = 50 \text{ kA}$ and operational voltage $\leq 415 \text{ V}$

Power range 4-pole motor - 50/60 Hz 380 - 400 - 415 V	Co-ordination type $I_q = 50 \text{ kA}$	Setting range		Type	Order code	Weight in kg Packing 1 piece
		A	A			
kW ... kW				State control voltage [...]	to be completed with control voltage code □	
2.2 ... 2.5	1	4.0 ... 6.3		DRA 9-30-DB6.3 [...]	1SBK 140 622R8 □ 44	2.620
3.0 ... 4.0	1	6.3 ... 9.0		DRA 9-30-DB9.0 [...]	1SBK 140 622R8 □ 45	2.620
5.0 ... 5.5	1	9.0 ... 12		DRA 12-30-DB12.5 [...]	1SBK 160 622R8 □ 46	2.620
6.5 ... 7.5	1	12.5 ... 16		DRA 16-30-DB16 [...]	1SBK 180 622R8 □ 47	2.620
0.37 ... 0.55	2	1.0 ... 1.6		DRA 9-30-DB1.6 [...]	1SBK 140 622R8 □ 41	2.620
- ... 0.75	2	1.6 ... 2.5		DRA 9-30-DB2.5 [...]	1SBK 140 622R8 □ 42	2.620
1.1 ... 1.5	2	2.5 ... 4.0		DRA 9-30-DB4.0 [...]	1SBK 140 622R8 □ 43	2.620
2.2 ... 2.5	2	4.0 ... 6.3		DRA 12-30-DB6.3 [...]	1SBK 160 622R8 □ 44	2.620
3.0 ... 4.0	2	6.3 ... 9.0		DRA 26-30-DB9.0 [...]	1SBK 240 622R8 □ 45	2.880
5.0 ... 5.5	2	9.0 ... 12.5		DRA 26-30-DB12.5 [...]	1SBK 240 622R8 □ 46	2.880
6.5 ... 7.5	2	12.5 ... 16		DRA 26-30-DB16 [...]	1SBK 240 622R8 □ 47	2.880
8.0 ... 9.0	2	16.0 ... 20.0		DRA 26-30-DB20 [...]	1SBK 240 622R8 □ 48	2.880
- ... 11.0	2	20.0 ... 25.0		DRA 26-30-DB25 [...]	1SBK 240 622R8 □ 49	2.880

Control voltage code

Voltage		Code	Control circuit
V 50 Hz	V 60 Hz	8 □	
24	24	1	must be connected to a supply separate from the power circuit, or either phase-to-neutral
42	42	2	
48	48	3	
110	110 ... 120	4	
110 ... 115	115 ... 127	9	
220 ... 230	230 ... 240	0	
230 ... 240	240 ... 260	8	
380 ... 400	400 ... 415	5	phase-to-phase connected
400 ... 415	415 ... 440	6	

DRA ... DB+BU Enclosed D.O.L. Starters Protection by Associated Manual Motor Starter



DRA ... DB + BU ordering details (380 ... 415 V - 50/60 Hz power circuit)

Co-ordination $I_q = 50 \text{ kA}$ and operational voltage $\leq 415 \text{ V}$

Power range 4-pole motor - 50/60 Hz 380 - 400 - 415 V		Co-ordination type $I_q = 50 \text{ kA}$	Setting range		Type	Order code	Weight in kg Packing 1 piece
kW	... kW		A	... A			
2.2	... 2.5	1	4.0	... 6.3	DRA 9-30-DB6.3 + BU <input type="checkbox"/>	1SBK 140 624R8 <input type="checkbox"/> 44	2.760
3.0	... 4.0		6.3	... 9.0	DRA 9-30-DB9.0 + BU <input type="checkbox"/>	1SBK 140 624R8 <input type="checkbox"/> 45	2.760
5.0	... 5.5		9.0	... 12	DRA 12-30-DB12.5 + BU <input type="checkbox"/>	1SBK 160 624R8 <input type="checkbox"/> 46	2.760
6.5	... 7.5		12.5	... 16	DRA 16-30-DB16 + BU <input type="checkbox"/>	1SBK 180 624R8 <input type="checkbox"/> 47	2.760
0.37	... 0.55	2	1.0	... 1.6	DRA 9-30-DB1.6 + BU <input type="checkbox"/>	1SBK 140 624R8 <input type="checkbox"/> 41	2.760
-	0.75		1.6	... 2.5	DRA 9-30-DB2.5 + BU <input type="checkbox"/>	1SBK 140 624R8 <input type="checkbox"/> 42	2.760
1.1	... 1.5	2	2.5	... 4.0	DRA 9-30-DB4.0 + BU <input type="checkbox"/>	1SBK 140 624R8 <input type="checkbox"/> 43	2.760
2.2	... 2.5		4.0	... 6.3	DRA 12-30-DB6.3 + BU <input type="checkbox"/>	1SBK 160 624R8 <input type="checkbox"/> 44	2.760
3.0	... 4.0	2	6.3	... 9.0	DRA 26-30-DB9.0 + BU <input type="checkbox"/>	1SBK 240 624R8 <input type="checkbox"/> 45	3.020
5.0	... 5.5		9.0	... 12.5	DRA 26-30-D12.5 + BU <input type="checkbox"/>	1SBK 240 624R8 <input type="checkbox"/> 46	3.020
6.5	... 7.5	2	12.5	... 16	DRA 26-30-DB16 + BU <input type="checkbox"/>	1SBK 240 624R8 <input type="checkbox"/> 47	3.020
8.0	... 9.0		16.0	... 20.0	DRA 26-30-DB20 + BU <input type="checkbox"/>	1SBK 240 624R8 <input type="checkbox"/> 48	3.020
8.0	... 11.0	2	20.0	... 25.0	DRA 26-30-DB25 + BU <input type="checkbox"/>	1SBK 240 624R8 <input type="checkbox"/> 49	3.020

Control voltage code

Voltage		Code 8 <input type="checkbox"/>	Control circuit
V 50 Hz	V 60 Hz		
24	24	1	must be connected to a supply separate from the power circuit, or either phase-to-neutral
42	42	2	
48	48	3	
110	110 ... 120	4	
110 ... 115	115 ... 127	9	
220 ... 230	230 ... 240	0	
230 ... 240	240 ... 260	8	
380 ... 400	400 ... 415	5	phase-to-phase connected
400 ... 415	415 ... 440	6	

DRA ... D, DRA ... DB, DRA ... DB+BU Enclosed D.O.L. Starters Protection by Associated Manual Motor Starter



Ordering details, contactor accessories

Description	Type	Order code	Pack- ing	Weight in kg
Function markers (50 pieces)	BA5-50	1 SBN 11 0000 R1000	box	0.017

Ordering details, manual motor starter accessories

Auxiliary contacts. Left-hand side mounting, 2 blocks at most. (the fault indicating contact must be placed right next to the manual motor starter without insertion of other accessories)

Description	Contacts	Type	Order code	Pack- ing	Weight in kg
Simultaneous contact	1 - 1	HK-11	1 SAM 101 901 R0001	10	0.031
	2 - -	HK-20	1 SAM 101 901 R0002	10	0.031
	- - 2	HK-02	1 SAM 101 901 R0003	10	0.031
Fault indicating contact	- 1 -	SK-10	1 SAM 101 904 R0001	10	0.031
	- - 1	SK-01	1 SAM 101 904 R0001	10	0.031

Note: Additional contacts can only be added on the DRA ... D version.

Identification labels

Description	Order code	Pack- ing	Weight in kg
Label holder	1 SAM 101 935 R0001	10	0.004
Labels (160 pieces)	1 SAM 101 935 R0002	box	0.008

Ordering details, enclosure cable glands

Description	Type	Order code	Pack- ing	Weight in kg
ISO 20 cable gland	FP20	1SBN 110312 R1000	2	0.008
ISO 32 cable gland	FP32	1SBN 110314 R1000	2	0.027

Technical data

General data

Maximum rated operational voltage	V	415
Isolation function		yes
Short-circuit protection		yes
Overload protection		yes
Temperature compensation	°C	-25 ... +50
Protection against motor single-phase operation		yes

Available capacity of terminals to be connected

Main upstream conductors			
Rigid solid/rigid stranded	1 x mm ²	1 ... 10	
Flexible without cable end	1 x mm ²	1 ... 6	
Main downstream conductors (as per contactor rating)			
Rigid solid/rigid stranded	1 or 2 x mm ²	A 9 to A 16	A 26
Flexible without cable end	1 or 2 x mm ²	1 ... 4	1.5 ... 6
Auxiliary conductors - Flexible	1 or 2 x mm ²	0.75 ... 2.5	1 ... 4
		0.75 ... 2.5	

Contactor A 9, A 12, A 16, A 26 see main catalogue "Contactors", section 2

Enclosure

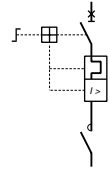
Plastic	Double insulation
Fire resistance	UL 94 V2
Protection	IP 64 (IP 54 for DRA ...+BU version)

>> Other accessories for contactors see main catalogue "Contactors", section 4
>> Other contactor data see main catalogue "Contactors", section 2

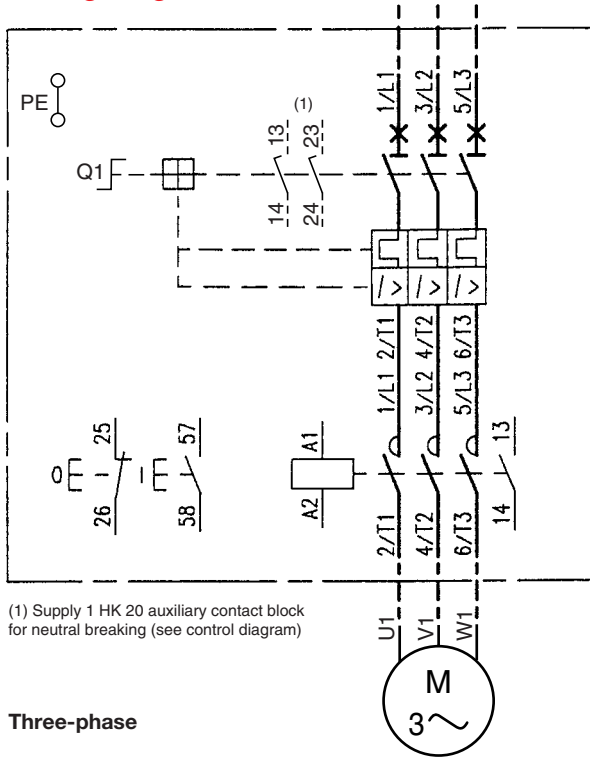
DRA ... D

Enclosed D.O.L. Starters

Protection by Associated Manual Motor Starter

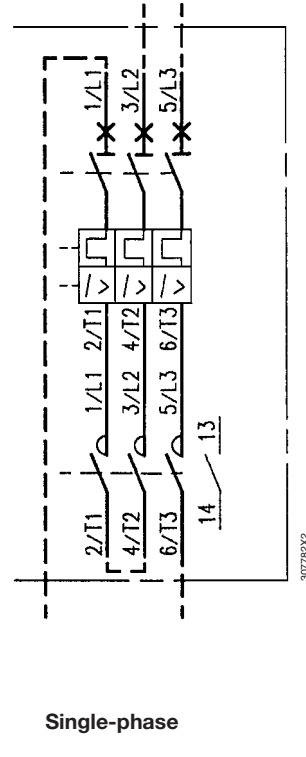


Wiring diagrams

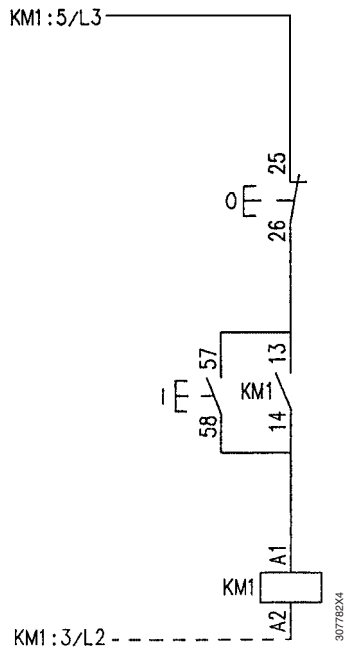


(1) Supply 1 HK 20 auxiliary contact block for neutral breaking (see control diagram)

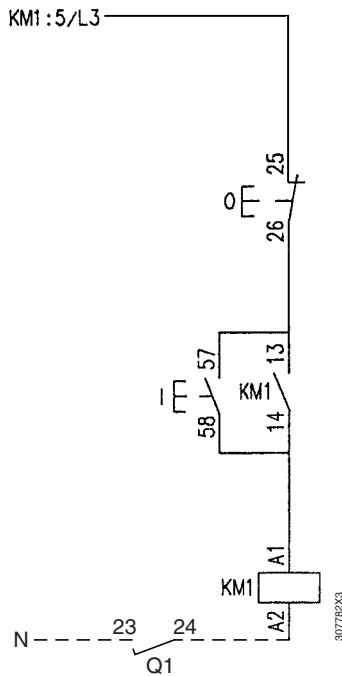
Three-phase



Single-phase



Local control
Phase-to-phase connection

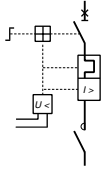


Local control
Phase-to-neutral connection

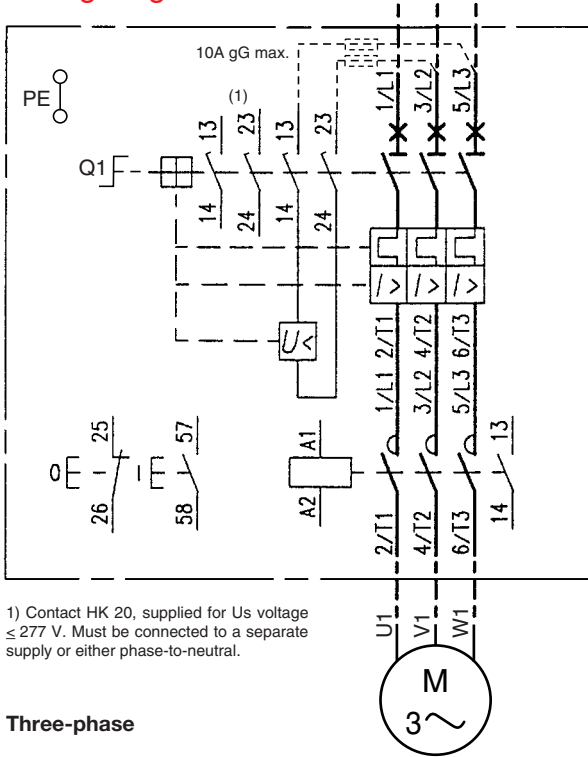
DRA ... DB

Enclosed D.O.L. Starters

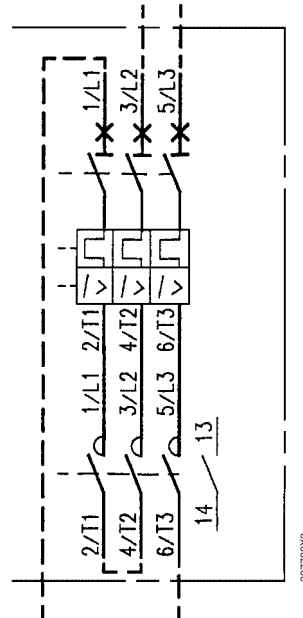
Protection by Associated Manual Motor Starter



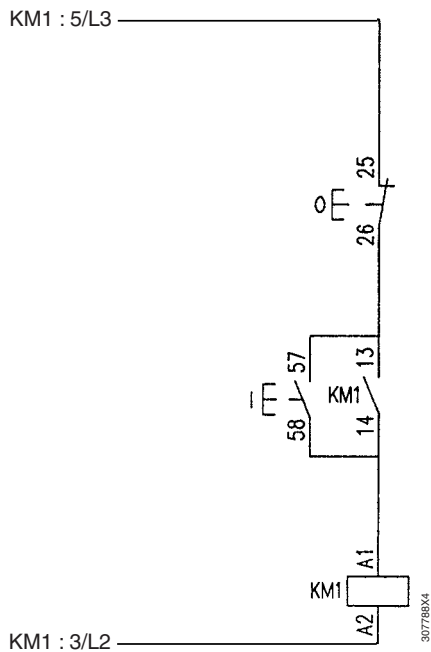
Wiring diagrams



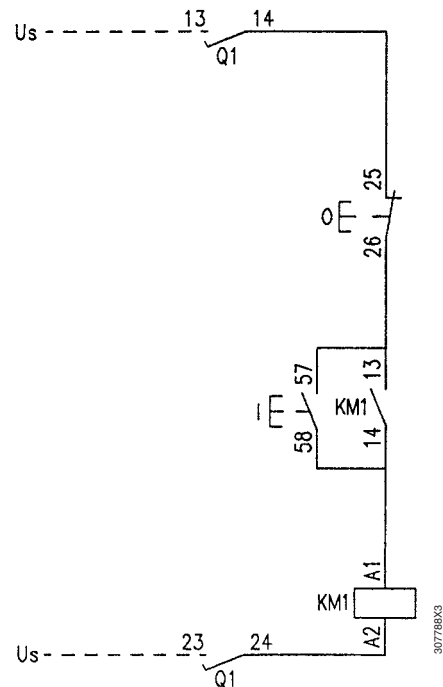
Three-phase



Single-phase



Local control
Phase-to-phase connection
 Coil voltage > 277 V

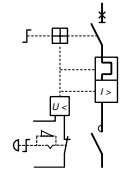


Local control
Phase to neutral connection or separate supply
 Coil voltage ≤ 277 V

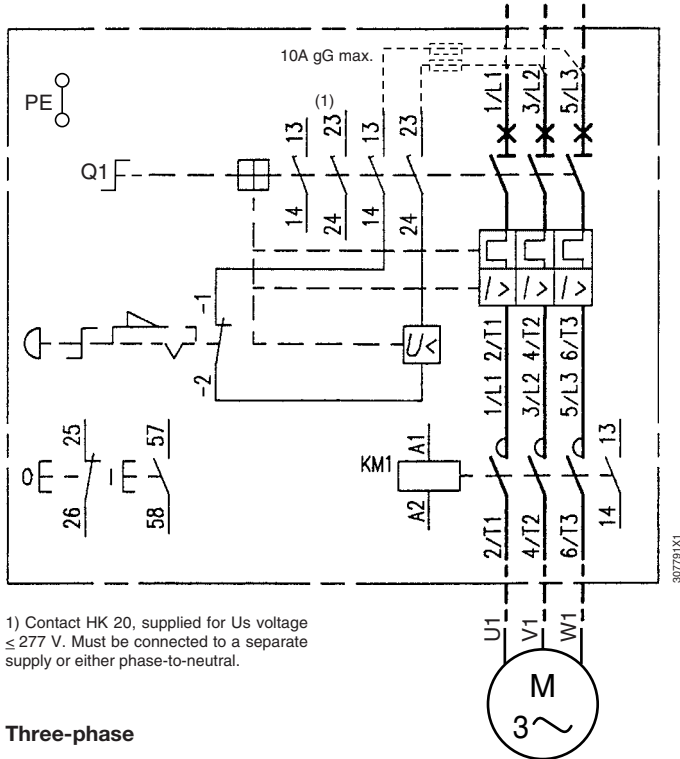
DRA ... DB+BU

Enclosed D.O.L. Starters

Protection by Associated Manual Motor Starter

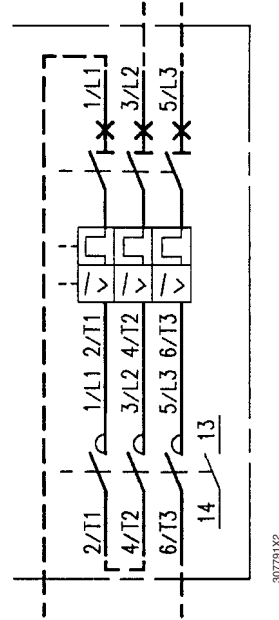


Wiring diagrams

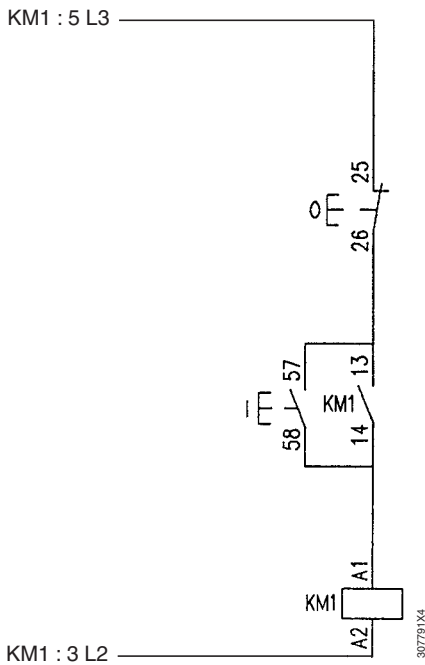


1) Contact HK 20, supplied for U_s voltage ≤ 277 V. Must be connected to a separate supply or either phase-to-neutral.

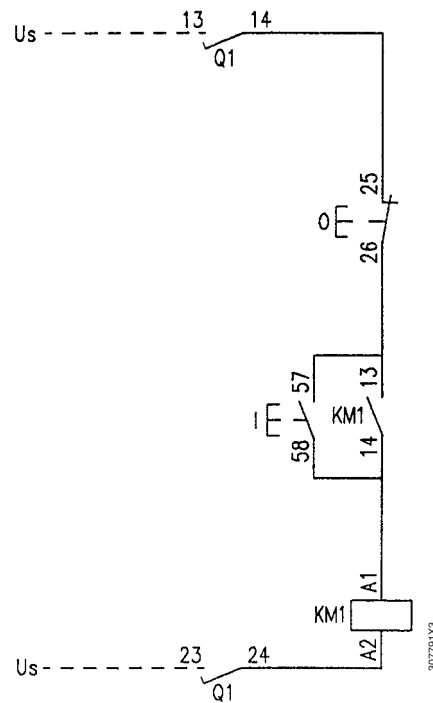
Three-phase



Single-phase



Local control
Phase-to-phase connection
Coil voltage > 277 V

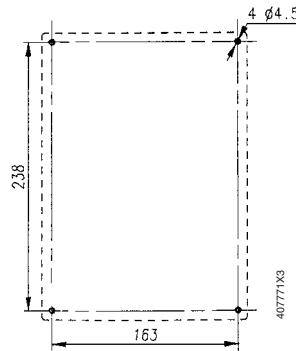
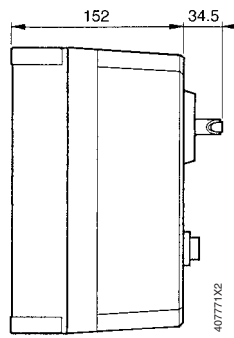
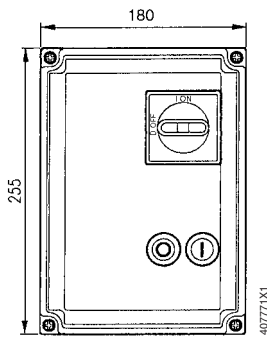


Local control
Phase to neutral connection or separate supply
Coil voltage ≤ 277 V

DRA ... D, DRA ... DB, DRA ... DB+BU Enclosed D.O.L. Starters Protection by Associated Manual Motor Starter

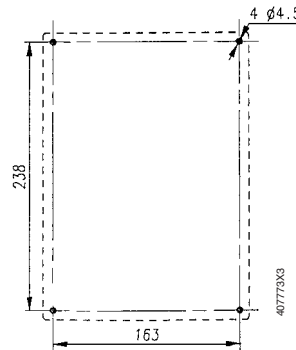
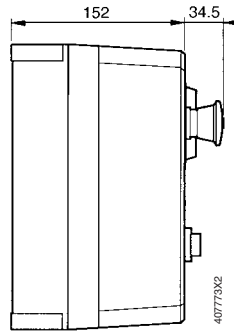
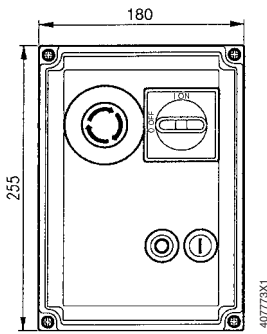


Dimensions (in mm)



Cable inlets	Cable outlets
Enclosure top	Enclosure bottom
3 x Ø 20.5/32.5	3 x Ø 20.5/32.5
Ø 20.5 for ISO 20	
Ø 32.5 for ISO 32	

DRA ... D and DRA ... DB

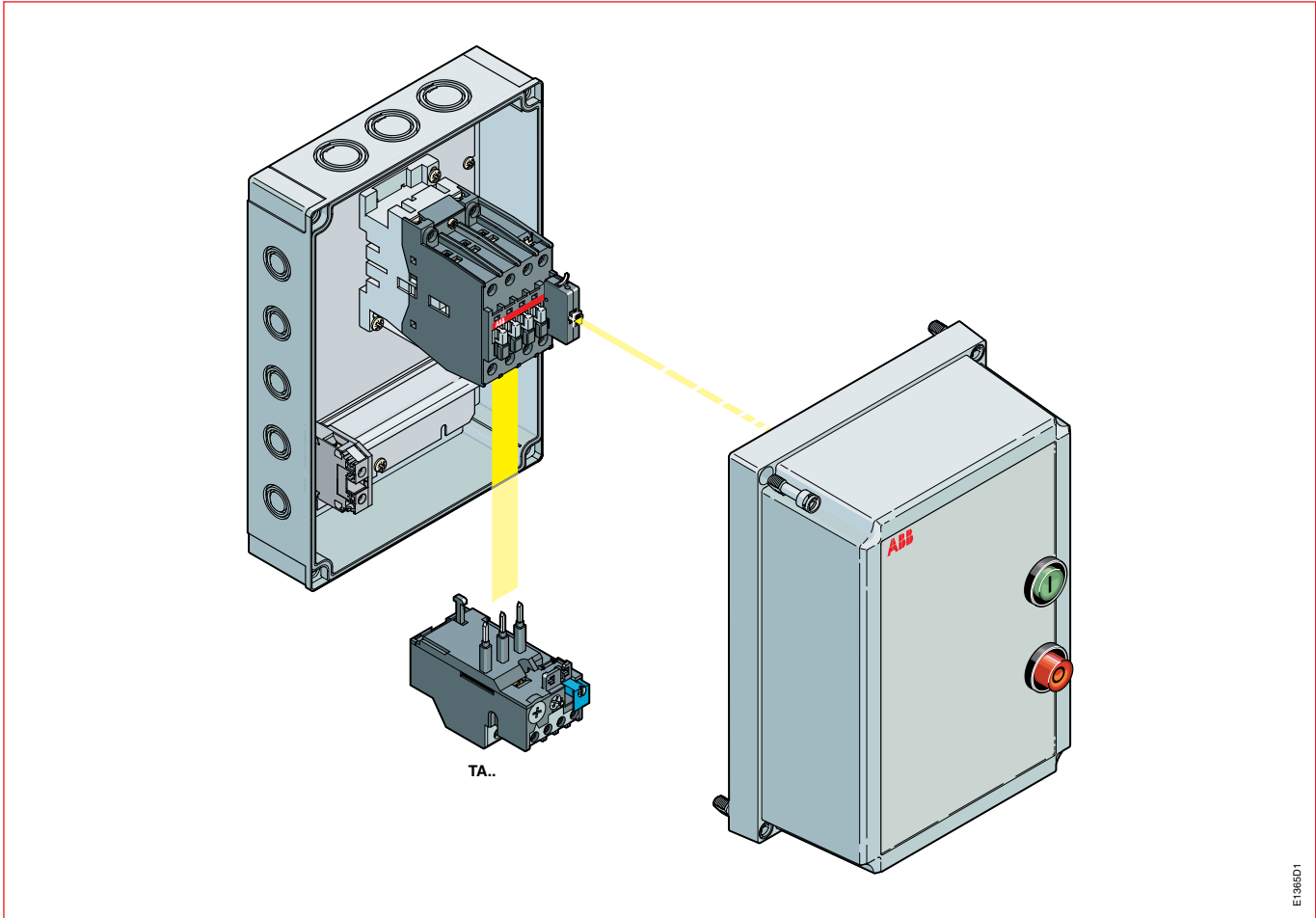


Cable inlets	Cable outlets
Enclosure top	Enclosure bottom
3 x Ø 20.5/32.5	3 x Ø 20.5/32.5
Ø 20.5 for ISO 20	
Ø 32.5 for ISO 32	

DRA ... DB + BU

Enclosed D.O.L. Starters

Protection by Thermal O/L Relay



E1365D1

DRA.. version

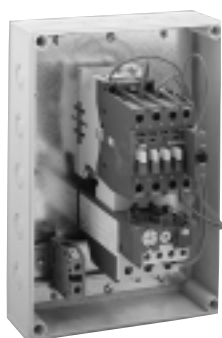
>> DWA, DYA, DRA, DEA enclosed D.O.L. starters	page 7/1
>> Enclosed D.O.L. starters in kit form	page 7/10

DWA, DYA, DRA, DEA Enclosed D.O.L. Starters Protection by Thermal O/L Relay



SB7869X3

DYA 9-30



SB7884X2

DRA 40-30 + TA 42 DU



SB7166X3

DEA 50-30



91389-23

DEA 110-30

Application

Starters for the control of three-phase asynchronous motors

- up to an operational voltage of 690 V, 50 or 60 Hz,
- for a starting time of 1.5 s maximum,
and a switching frequency ≤ 15 starts/hour with a load factor of 80 %
or ≤ 30 starts/hour with a load factor of 50 %,
 - at an ambient temperature ≤ 40 °C around the enclosure,
 - in conformity with EN 60947-4-1/IEC 947-4-1 standards.

Description

Each starter is delivered assembled, cabled by us and contains:

- 1 three-pole contactor. Rating from 9 to 110 A AC-3, 400 V.
- 1 hold-in contact.
- The space for the thermal O/L relay.
The thermal O/L relay will be chosen according to motor nominal current and supplied separately in kit form.
The plunger index will be positioned on R/O.
- Two control circuit connection versions:
 - phase-to-phase control supply,
 - control supply for you to connect: separate supply, or phase-to-neutral.
- 1 PE terminal for connection of the external protective conductor (on DWA, DYA and DRA enclosures).
- 1 earth bonding terminal (on DEA enclosure).
- 1 enclosure equipped with:
 - 1 green flush "I" ON pushbutton,
 - 1 red protruding "O" OFF/RESET pushbutton.

>> Ordering details	page 7/2	>> Accessories	page 7/4
>> Starters in kit form	page 7/10	>> Empty enclosures	page 7/5
>> Wiring diagrams	page 7/6	>> Dimensions	page 7/8

DWA, DYA, DRA, DEA Enclosed D.O.L. Starters Protection by Thermal O/L Relay

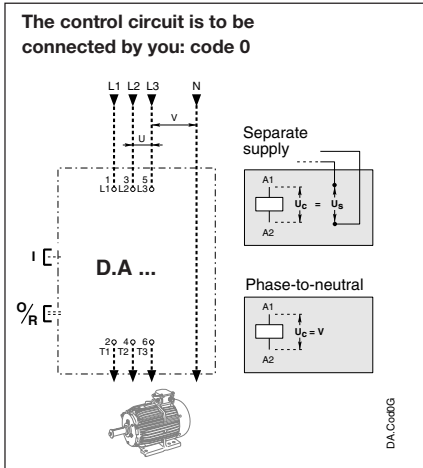


Ordering details (Order the thermal O/L relay separately, see page 7/3)

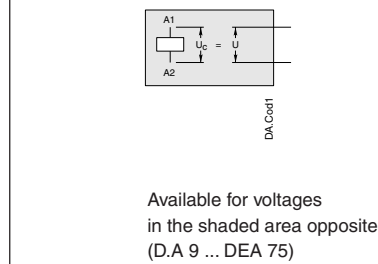
Rated operat. current AC-3 400 V A	Power AC-3 4-pole motor - 50/60 Hz			Short-circuit protection *		Type State control voltage ___	Order code to be completed with the following codes - control voltage <input type="checkbox"/> - control supply <input type="checkbox"/>	Weight in kg Packing 1 piece
	380 V	400 V	415 V	690 V	Type 2 co-ordination as per EN 60947-4-1/IEC 947-4-1 380-400 V aM fuses			
Starters in IP 43 plastic enclosure - Fire resistance as per UL 94 V0								
9	4	4	5.5	10	25	DWA 9-30 ___	1SBK 140 <input type="checkbox"/> 18R8 <input type="checkbox"/> 00	0.810
12	5.5	5.5	7.5	16	32	DWA 12-30 ___	1SBK 160 <input type="checkbox"/> 18R8 <input type="checkbox"/> 00	0.810
17	7.5	9	9	20	32	DWA 16-30 ___	1SBK 180 <input type="checkbox"/> 18R8 <input type="checkbox"/> 00	0.810
Starters in IP 65 plastic enclosure - Fire resistance as per UL 94 V0								
9	4	4	5.5	10	25	DYA 9-30 ___	1SBK 140 <input type="checkbox"/> 28R8 <input type="checkbox"/> 00	0.810
12	5.5	5.5	7.5	16	32	DYA 12-30 ___	1SBK 160 <input type="checkbox"/> 28R8 <input type="checkbox"/> 00	0.810
17	7.5	9	9	20	32	DYA 16-30 ___	1SBK 180 <input type="checkbox"/> 28R8 <input type="checkbox"/> 00	0.810
Starters in IP 65 plastic enclosure - Fire resistance as per UL 94 V2								
26	11	11	15	25	50	DRA 26-30 ___	1SBK 240 <input type="checkbox"/> 22R8 <input type="checkbox"/> 00	2.450
32	15	15	18.5	32	63	DRA 30-30 ___	1SBK 280 <input type="checkbox"/> 22R8 <input type="checkbox"/> 00	2.560
37	18.5	18.5	22	40	80	DRA 40-30 ___	1SBK 320 <input type="checkbox"/> 22R8 <input type="checkbox"/> 00	2.560
Starters in IP 55 sheet metal enclosure								
50	22	25	30	50	100	DEA 50-30 ___	1SBK 350 <input type="checkbox"/> 42R8 <input type="checkbox"/> 00	3.330
65	30	37	37	63	125	DEA 63-30 ___	1SBK 370 <input type="checkbox"/> 42R8 <input type="checkbox"/> 00	4.460
75	37	40	40	100	160	DEA 75-30 ___	1SBK 410 <input type="checkbox"/> 42R8 <input type="checkbox"/> 00	4.460
Starters in IP 66 sheet metal enclosure								
96	45	55	55	125	200	DEA 95-30 ___	1SFK 430 0 33 R8 <input type="checkbox"/> 00	10.00
110	55	59	75	160	200	DEA 110-30 ___	1SFK 450 0 33 R8 <input type="checkbox"/> 00	10.00

* For other short-circuit protection devices, please consult our co-ordination tables.

Control supply code



The control circuit is supplied phase-to-phase: code 1



Control voltage code

Voltage		Code
V 50 Hz	V 60 Hz	8 <input type="checkbox"/>
24	24	1
42	42	2
48	48	3
110	110 ... 120	4
110 ... 115	115 ... 127	9
220 ... 230	230 ... 240	0
230 ... 240	240 ... 260	8
380 ... 400	400 ... 415	5
400 ... 415	415 ... 440	6

>> Thermal O/L relay ordering details page 7/3
>> Wiring diagrams page 7/6

>> Accessories page 7/4
>> Dimensions page 7/8

DWA, DYA, DRA, DEA Enclosed D.O.L. Starters Protection by Thermal O/L Relay



Version without pushbutton



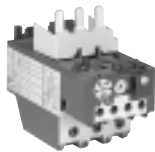
DYA SB

DYA 9-30 SB



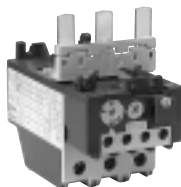
SB7386S2

TA 25 DU



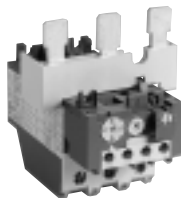
SB7361S3

TA 42 DU



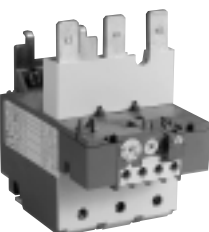
SB7387S2

TA 75 DU



SB7389S3

TA 80 DU



SB7398S4

TA 110 DU

Enclosure	Type	Order code to be completed with the following codes - control voltage <input type="checkbox"/> - control supply <input type="checkbox"/> (see page 7/2)	Weight in kg Packing 1 piece
IP65 plastic <input type="checkbox"/> fire resistance as per UL 94 V0	DYA 9-30 SB <input type="checkbox"/>	1SBK 140 <input type="checkbox"/> 26R8 <input type="checkbox"/> 00	0.780
	DYA 12-30 SB <input type="checkbox"/>	1SBK 160 <input type="checkbox"/> 26R8 <input type="checkbox"/> 00	0.780
	DYA 16-30 SB <input type="checkbox"/>	1SBK 180 <input type="checkbox"/> 26R8 <input type="checkbox"/> 00	0.780
IP65 plastic <input type="checkbox"/> fire resistance as per UL 94 V2	DRA 26-30 SB <input type="checkbox"/>	1SBK 240 <input type="checkbox"/> 20R8 <input type="checkbox"/> 00	2.410
	DRA 30-30 SB <input type="checkbox"/>	1SBK 280 <input type="checkbox"/> 20R8 <input type="checkbox"/> 00	2.520
	DRA 40-30 SB <input type="checkbox"/>	1SBK 320 <input type="checkbox"/> 20R8 <input type="checkbox"/> 00	2.520
IP55 sheet metal	DEA 50-30 SB <input type="checkbox"/>	1SBK 350 <input type="checkbox"/> 40R8 <input type="checkbox"/> 00	3.280
	DEA 63-30 SB <input type="checkbox"/>	1SBK 370 <input type="checkbox"/> 40R8 <input type="checkbox"/> 00	4.410
	DEA 75-30 SB <input type="checkbox"/>	1SBK 410 <input type="checkbox"/> 40R8 <input type="checkbox"/> 00	4.410

Consult us for other versions

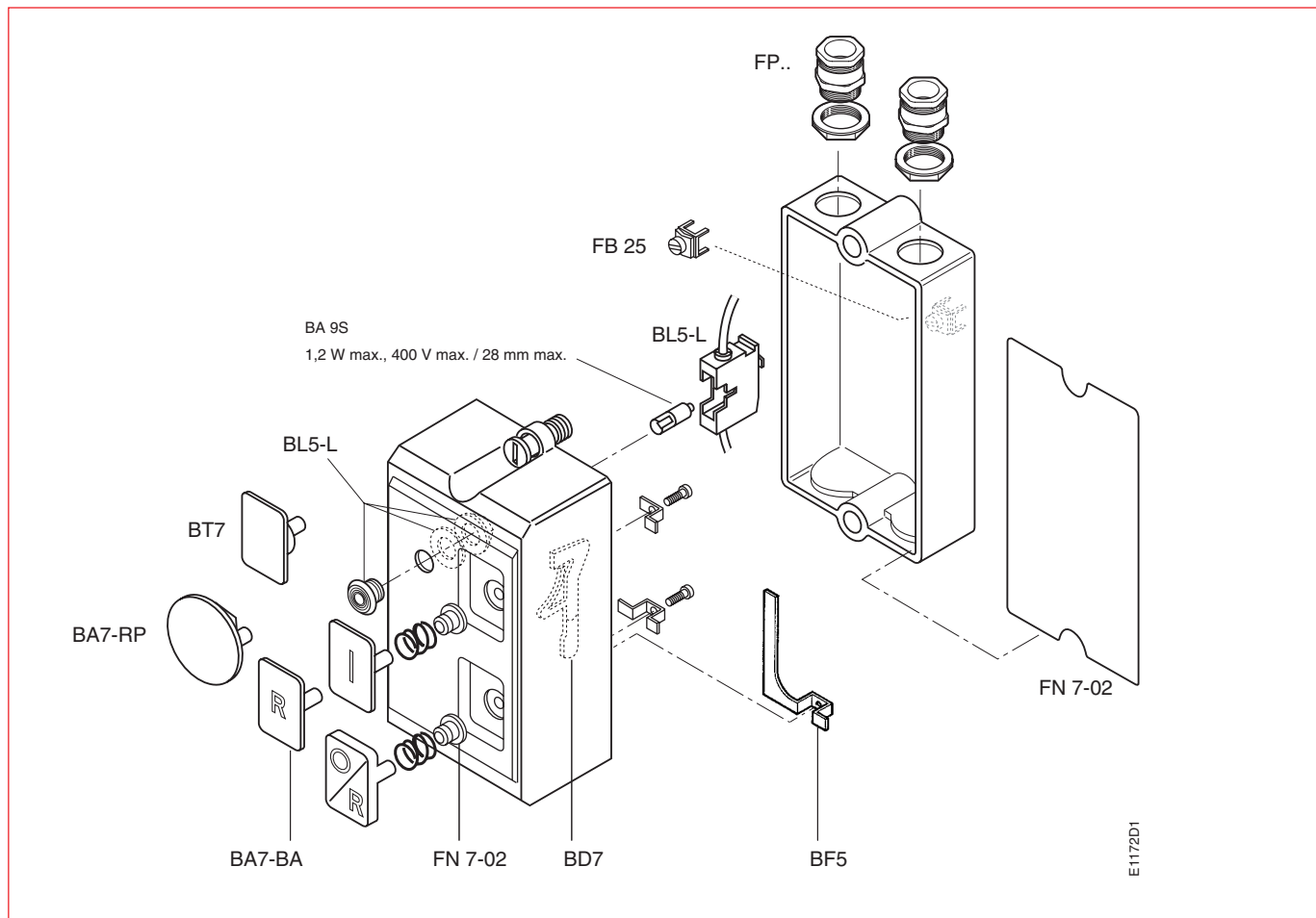
Ordering details, thermal O/L relays

Starter	Setting range		Type	Order code	Weight in kg Packing 1 piece	
	A	... A				
D.A 9-30 to D.A 30-30	0.1	... 0.16	TA 25 DU 0.16	1SAZ 21 1201 R1005	0.150	
	0.16	... 0.25	TA 25 DU 0.25	1SAZ 21 1201 R1009	0.150	
	0.25	... 0.4	TA 25 DU 0.4	1SAZ 21 1201 R1013	0.150	
	0.4	... 0.63	TA 25 DU 0.63	1SAZ 21 1201 R1017	0.150	
	0.63	... 1.0	TA 25 DU 1.0	1SAZ 21 1201 R1021	0.150	
	1.0	... 1.4	TA 25 DU 1.4	1SAZ 21 1201 R1023	0.150	
	1.3	... 1.8	TA 25 DU 1.8	1SAZ 21 1201 R1025	0.150	
	1.7	... 2.4	TA 25 DU 2.4	1SAZ 21 1201 R1028	0.150	
	2.2	... 3.1	TA 25 DU 3.1	1SAZ 21 1201 R1031	0.150	
	2.8	... 4.0	TA 25 DU 4.0	1SAZ 21 1201 R1033	0.150	
DRA 40-30	3.5	... 5.0	TA 25 DU 5.0	1SAZ 21 1201 R1035	0.150	
	4.5	... 6.5	TA 25 DU 6.5	1SAZ 21 1201 R1038	0.150	
	6.0	... 8.5	TA 25 DU 8.5	1SAZ 21 1201 R1040	0.150	
	7.5	... 11	TA 25 DU 11	1SAZ 21 1201 R1043	0.150	
	10	... 14	TA 25 DU 14	1SAZ 21 1201 R1045	0.150	
	13	... 19	TA 25 DU 19	1SAZ 21 1201 R1047	0.150	
	18	... 25	TA 25 DU 25	1SAZ 21 1201 R1051	0.150	
	24	... 32	TA 25 DU 32	1SAZ 21 1201 R1053	0.170	
	DRA 40-30	18	... 25	TA 42 DU 25	1SAZ 31 1201 R1001	0.330
		22	... 32	TA 42 DU 32	1SAZ 31 1201 R1002	0.330
29		... 42	TA 42 DU 42	1SAZ 31 1201 R1003	0.330	
DEA 50-30 to DEA 75-30	18	... 25	TA 75 DU 25	1SAZ 32 1201 R1001	0.330	
	22	... 32	TA 75 DU 32	1SAZ 32 1201 R1002	0.330	
	29	... 42	TA 75 DU 42	1SAZ 32 1201 R1003	0.330	
	36	... 52	TA 75 DU 52	1SAZ 32 1201 R1004	0.330	
	45	... 63	TA 75 DU 63	1SAZ 32 1201 R1005	0.330	
	60	... 80	TA 75 DU 80	1SAZ 32 1201 R1006	0.330	
DEA 95-30 and DEA 110-30	29	... 42	TA 80 DU 42	1SAZ 33 1201 R1003	0.360	
	36	... 52	TA 80 DU 52	1SAZ 33 1201 R1004	0.360	
	45	... 63	TA 80 DU 63	1SAZ 33 1201 R1005	0.360	
	60	... 80	TA 80 DU 80	1SAZ 33 1201 R1006	0.360	
DEA 95-30 and DEA 110-30	65	... 90	TA 110 DU 90	1SAZ 41 1201 R1001	0.750	
	80	... 110	TA 110 DU 110	1SAZ 41 1201 R1002	0.750	

DWA, DYA, DRA, DEA Enclosed D.O.L. Starters Protection by Thermal O/L Relay



Ordering details, DWA and DYA starter enclosure accessories



Description	Type	Order code	Packing	Weight in kg
Blue flush RESET pushbutton	BA7-BA	FPTN 472615 R0004	1	0.015
Red "OFF" mushroom headed button	BA7-RP	FPTN 472615 R0003	1	0.021
"ON" pushbutton interlocking lever	BD7	FPMP 307404 P0001	10	0.003
Blanking plate	BT 7	FPTN 472637 R0001	1	0.015
Lamp holder (lamp not supplied), delivered with 3 lenses (colourless, red, green)	BL5-L	1SBN 070054 R1000	1	0.022
Neutral terminal	FB 25	FPTN 472627 R0001	1	0.005
Sealing gasket set	FN 7-02	FPTN 472619 R0001	1	0.005
Actuator lever for "Stop" function on contactor itself equipped with front mounted CB5-01 (place 5L3 - 6T3)	BF5	1SBN 111402 R1000	1	0.012
Impulse contact "Stop" with built-in terminal leads	CB5-01	1SBN 010013 R 1001	1	0.012

Ordering details, enclosure cable glands

Description	Type	Order code	Packing	Weight in kg
ISO 20 cable gland	FP20	1SBN 110312 R1000	2	0.008
ISO 25 cable gland	FP25	1SBN 110313 R1000	2	0.016
ISO 32 cable gland	FP32	1SBN 110314 R1000	2	0.027
ISO 40 cable gland	FP40	1SBN 110315 R1000	2	0.048

DWA, DYA, DRA, DEA Enclosed D.O.L. Starters Protection by Thermal O/L Relay



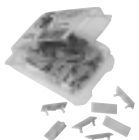
DYA.SB

DYA 9-30 SB



SB7160X3

FE 50-12 VARS



SB7587S4

BA5-50



SB7603S2

CA5-10



SB7376S4

CAL 5-11



SB7571S3

CB5-10



SB7576S3

LK 75-L



5512/S

LP16

Coil voltage code for DS 25-A/DR 25-A

Voltage (V) 50 / 60 Hz	Coil voltage code	<input type="checkbox"/>
24	1	
48	2	
110	3	
220 / 230	5	
500	6	

Ordering details, empty enclosures without pushbutton

For starters	Type	Order code	Pack- ing	Weight in kg
DYA 9 ... DYA 16	FY 16.12 SB	FPTN 372630 R0055	1	0.400
DRA 26 ... DRA 40	FR 40.12 SB	1SBN 103220 R1000	1	1.810
DEA 50	FE 45.12 SB	FPTN 372206 R0004	1	2.200
DEA 63 ... DEA 75	FE 85.12 SB	FPTN 372208 R0004	1	3.300

Ordering details, empty enclosures with pushbuttons

1 green flush "ON" pushbutton and 1 red protruding "OFF" pushbutton

For starters	Type	Order code	Pack- ing	Weight in kg
DWA 9 ... DWA 16	FW 16.12 VARS	FPTN 372630 R0050	1	0.500
DYA 9 ... DYA 16	FY 16.12 VARS	FPTN 372630 R0051	1	0.500
DRA 26	FR 26.12 VARS	1SBN 102422 R1000	1	1.850
DRA 30	FR 30.12 VARS	1SBN 102822 R1000	1	1.850
DRA 40	FR 40.12 VARS	1SBN 103222 R1000	1	1.850
DEA 50	FE 50.12 VARS	FPTN 372206 R0025	1	2.280
DEA 63, DEA 75	FE 75.12 VARS	FPTN 372208 R0019	1	3.410
DEA 95, DEA 110	FE 110.12 VARS	1SFN 104333 R1000	1	7.000

Ordering details, contactor accessories

Description	Type	Order code	Pack- ing	Weight in kg
Function markers (50 pieces)	BA5-50	1 SBN 11 0000 R1000	box	0.017
1 x "N.O." auxiliary contact block	CA5-10	1 SBN 01 0010 R1010	10	0.014
1 x "N.C." auxiliary contact block	CA5-01	1 SBN 01 0010 R1001	10	0.014
"N.O."+"N.C." side-mtd cont. blk	CAL5-11	1 SBN 01 0020 R1011	2	0.050
1 x "N.O." impulse contact block	CB5-10	1 SBN 01 0013 R1010	1	0.012
1 x "N.C." impulse contact block	CB5-01	1 SBN 01 0013 R1001	1	0.012
Control lead terminals (A 50 ... A 75) Right/left connection	LK 75-L	1 SBN 07 3552 R1003	2	0.006
Front connection	LK 75-F	1 SBN 07 3552 R1002	2	0.006
Control lead terminals (A 95, A 110) Right/left connection	LK 110	1 SFN 07 4352 R1000	2	0.010
Lamp holder (1)	BL-5L	1 SBN 07 0054 R1000	1	0.022
Fuse holder (1)	BL-5F	1 SBN 07 0055 R1000	1	0.020
Connecting strip (A 9 ...16)	LP 16	FPEP 407 000 R0001	10	0.002
Connecting strip (A 26)	LP 25	FPEP 407 001 R0001	10	0.004
Connecting strip (A 95 / 110)	LY 110	1 SFN 07 4303 R1000	1	0.055
Add. terminal block (A 95 / A 110)	LD 110	1 SFN 07 4308 R1000	1	0.150
Terminal enlargement pieces (set of 3 bars) for A 95 / A 110	LW 110	1 SFN 07 4307 R1000	1	0.100

(1) for DWA ... and DYA only

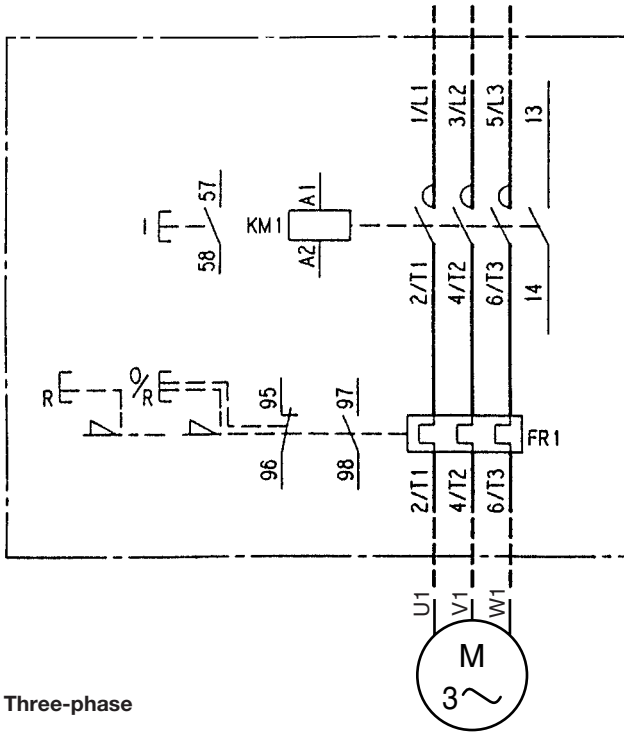
Ordering details, thermal O/L relay accessories

Description	Type	Order code	Pack- ing	Weight in kg
	State coil voltage <input type="checkbox"/>	to be completed with the coil voltage code <input type="checkbox"/>		
Function markers (50 pieces)	BA5-50	1SBN 11000 R1000	box	0.017
Remote tripping coil for TA 25 DU	DS 25-A <input type="checkbox"/>	1SAZ 201501 R000 <input type="checkbox"/>	1	0.100
Remote resetting coil for TA 25 DU	DR 25-A <input type="checkbox"/>	1SAZ 201504 R000 <input type="checkbox"/>	1	0.100

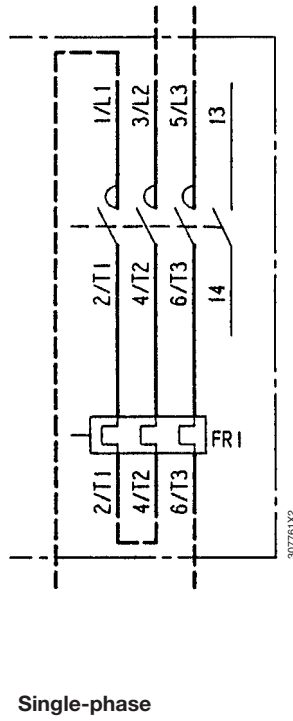
DWA, DYA, DRA, DEA Enclosed D.O.L. Starters Protection by Thermal O/L Relay



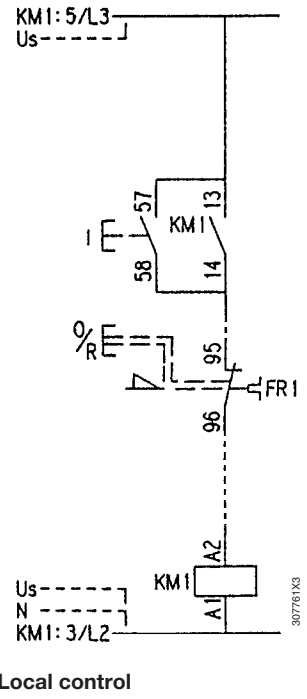
D.A 9 ... D.A 16 wiring diagrams



Three-phase

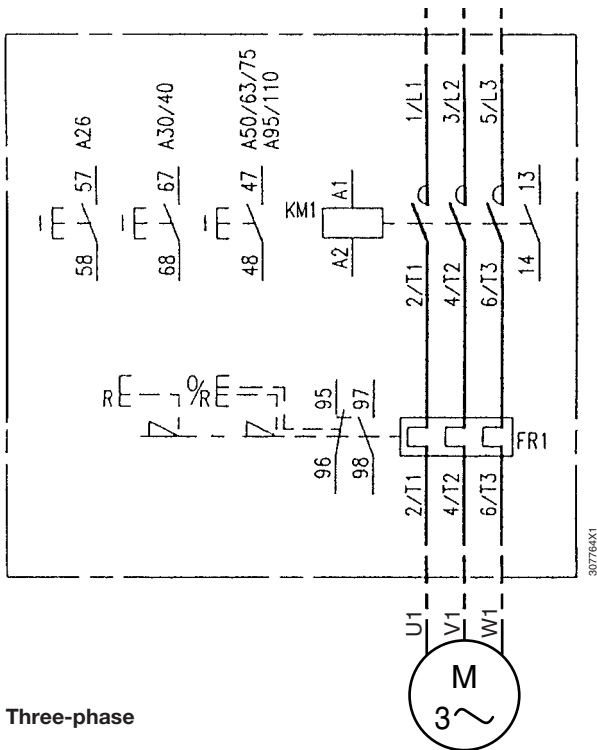


Single-phase

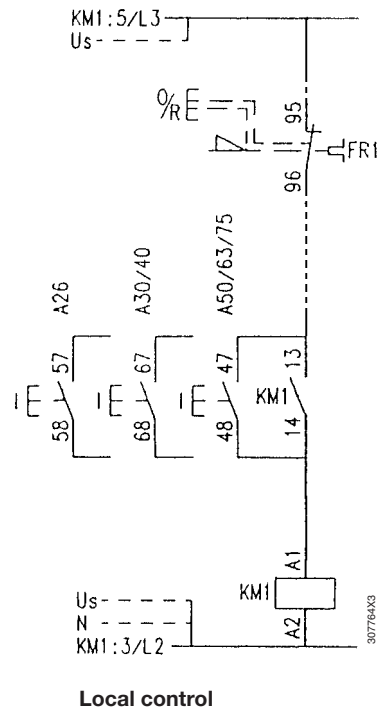


Local control

D.A 26 ... D.A 75 wiring diagrams



Three-phase

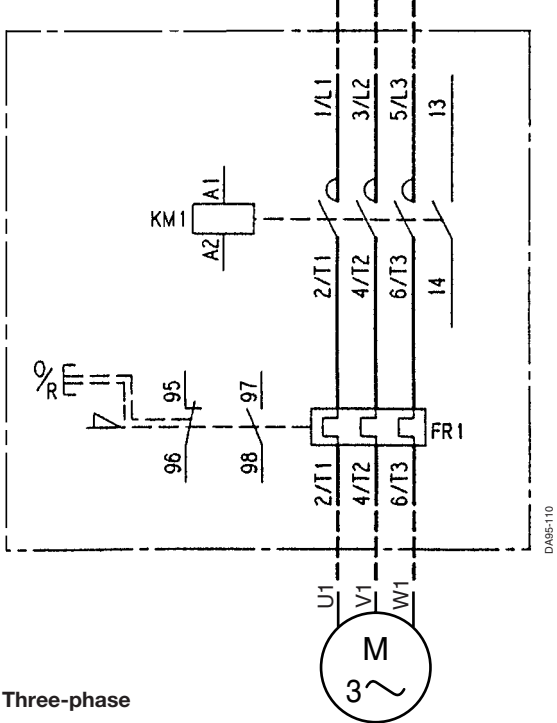


Local control

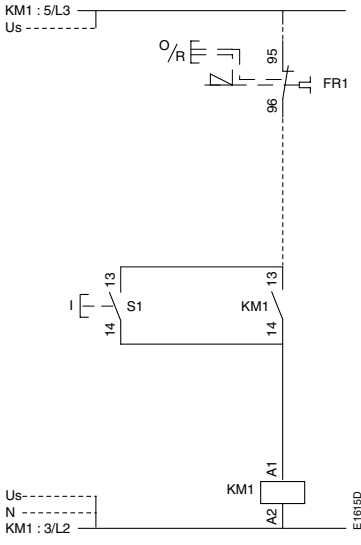
DWA, DYA, DRA, DEA Enclosed D.O.L. Starters Protection by Thermal O/L Relay



DEA 95, DEA 110 wiring diagrams



Three-phase

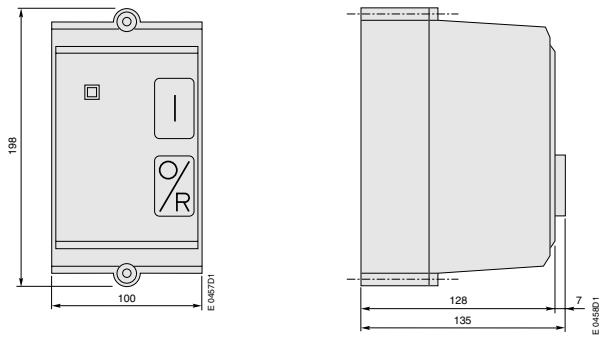


Local control

DWA, DYA, DRA, DEA Enclosed D.O.L. Starters Protection by Thermal O/L Relay

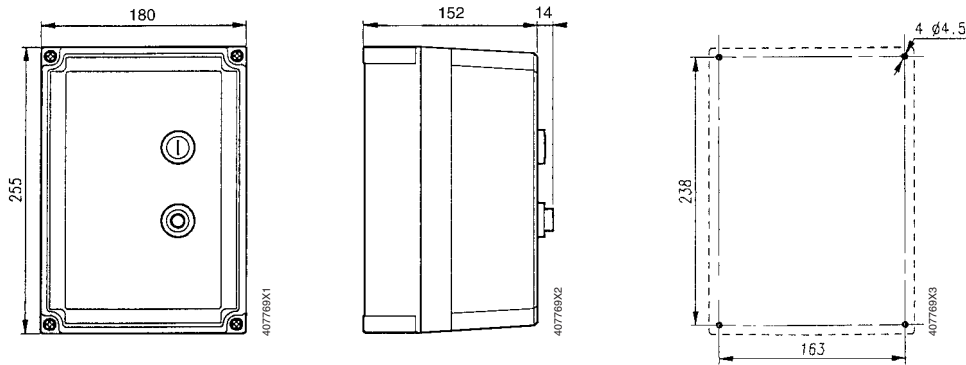


Dimensions (in mm)



Cable inlets	Cable outlets
Enclosure top	Enclosure bottom
2 x Ø 20.5/25.5	2 x Ø 20.5/25.5
Ø 20.5 for ISO 20	
Ø 25.5 for ISO 25	

D.A 9 ... D.A 16



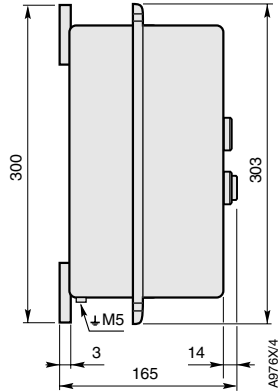
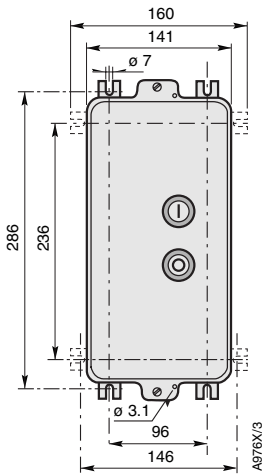
Cable inlets	Cable outlets
Enclosure top	Enclosure bottom
3 x Ø 20.5/32.5	3 x Ø 20.5/32.5
Ø 20.5 for ISO 20	
Ø 32.5 for ISO 32	

DRA 26 ... DRA 40

DWA, DYA, DRA, DEA Enclosed D.O.L. Starters Protection by Thermal O/L Relay

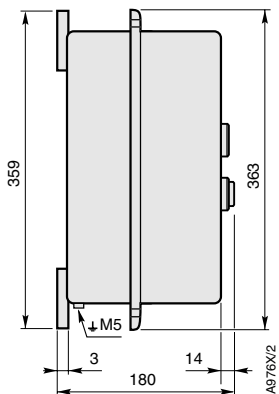
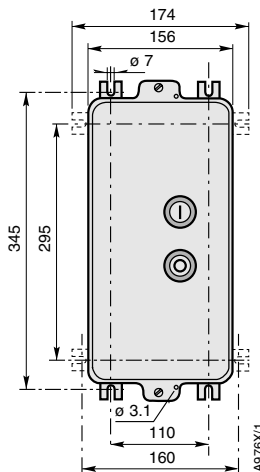


Dimensions (in mm)



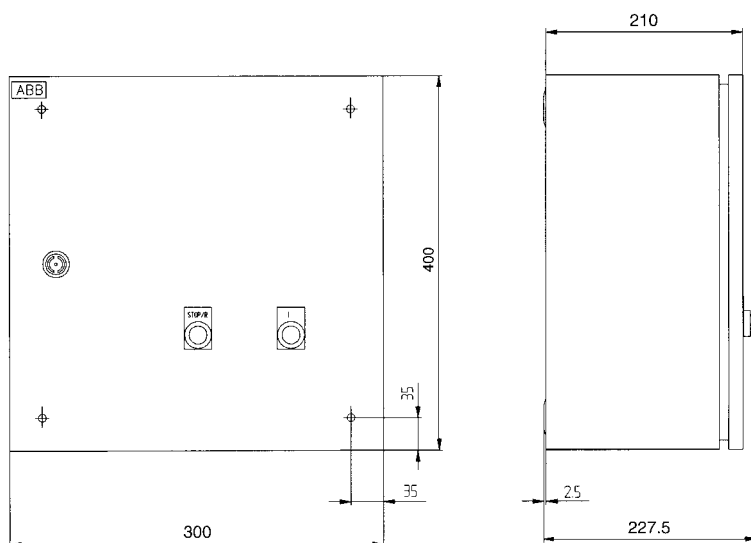
Cable inlets	Cable outlets
Enclosure top	Enclosure bottom
2 x \varnothing 32.5	2 x \varnothing 32.5
\varnothing 32.5 for ISO 32	

DEA 50



Cable inlets	Cable outlets
Enclosure top	Enclosure bottom
1 x \varnothing 20.5	1 x \varnothing 20.5
1 x \varnothing 40.5	2 x \varnothing 40.5
\varnothing 20.5 for ISO 20	
\varnothing 40.5 for ISO 40	

DEA 63, DEA 75



DEA 95, DEA 110

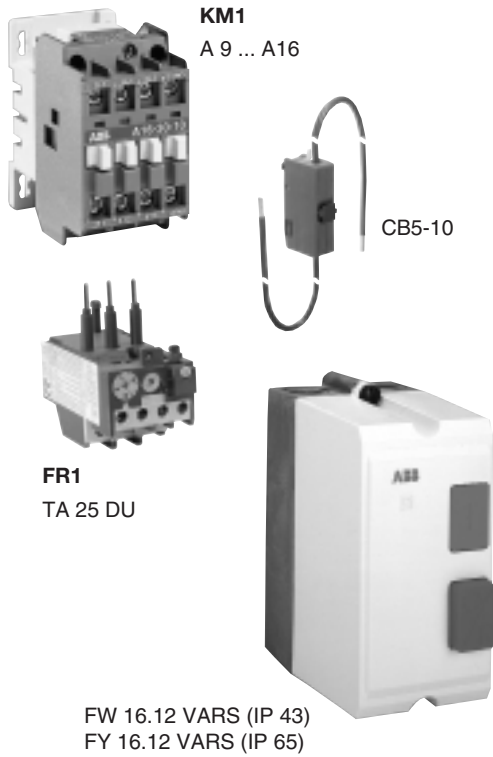
Enclosed D.O.L. Starters in Kit Form

Protection by Thermal O/L Relay

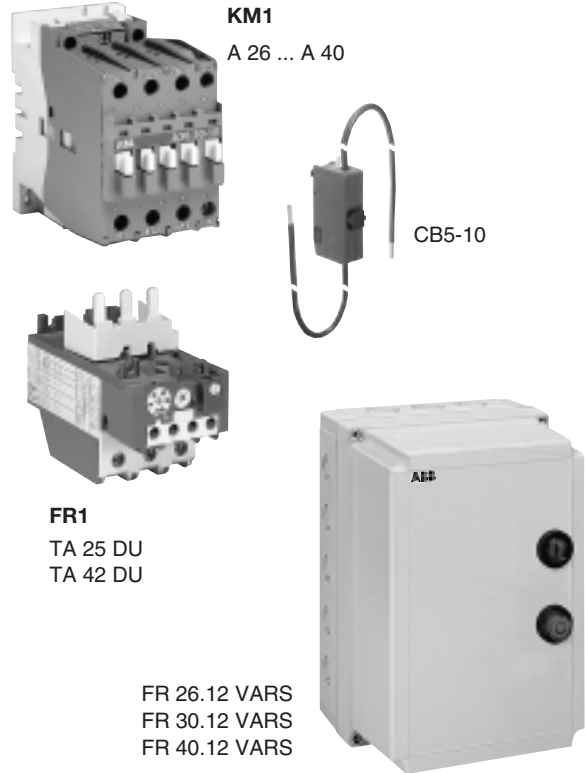


Starters in kit form

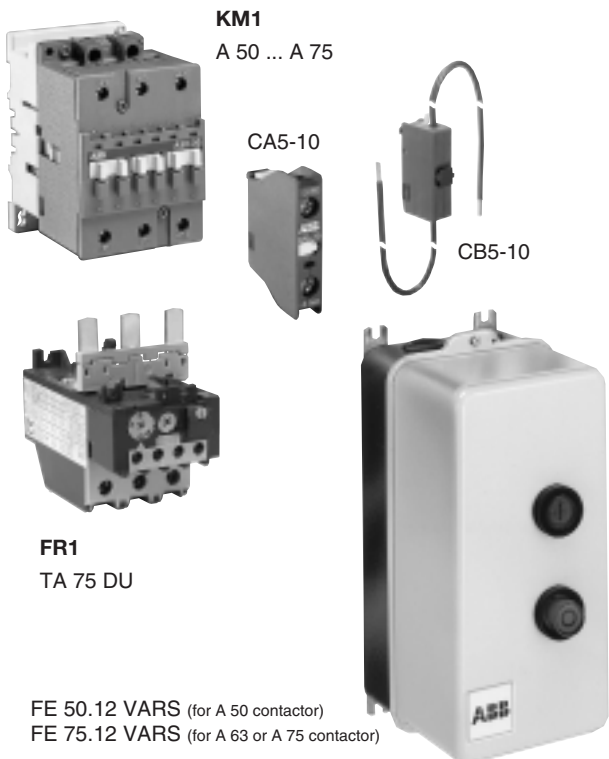
Ratings A 9 ... A 16



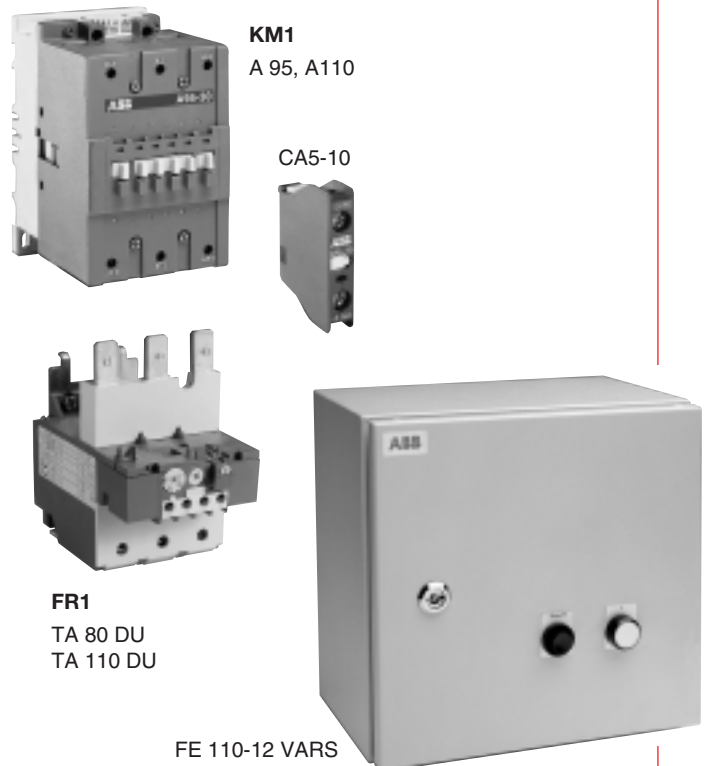
Ratings A 26 ... A 40



Ratings A 50 ... A 75



Ratings A 95 ... A 110



Enclosed D.O.L. Starters in Kit Form

Protection by Thermal O/L Relay



Starters in kit form*

Rated operat. current	Power AC-3 4-pole motor 50/60 Hz	KM1 contactor		ON contact	FR1 thermal O/L relay	Enclosure
I_{cs} AC-3 A	Nominal voltage (V)	kW	Type to be completed with: state control voltage <input type="checkbox"/>	Type	Type	Type
			Order code to be completed with: control voltage code <input type="checkbox"/> (see page 7/2)	Order code	Order code to be completed according to the setting range (see chart on page 7/3)	Order code
9	380-400	4	1 x A 9-30-10 <input type="checkbox"/>			1 x FW16.12VARS FPTN372630R0050 (IP 43 plastic)
9	415	4	1SBL 14 1001 R8 <input type="checkbox"/> 10			1 x FY16.12VARS FPTN372630R0051 (IP 65 plastic)
7	690	5.5	(*13" - "14" hold-in)			
12	380-400	5.5	1 x A 12-30-10 <input type="checkbox"/>			
12	415	5.5	1SBL 16 1001 R8 <input type="checkbox"/> 10			
9	690	7.5	(*13" - "14" hold-in)			
17	380-400	7.5	1 x A 16-30-10 <input type="checkbox"/>	1 x CB5-10	1 x TA 25 DU <input type="checkbox"/>	
17	415	9	1SBL 18 1001 R8 <input type="checkbox"/> 10	1SBN 01 0013 R1010	1SAZ 21 1201 R10 <input type="checkbox"/> <input type="checkbox"/>	
10	690	9	(*13" - "14" hold-in)			
26	380-400	11	1 x A 26-30-10 <input type="checkbox"/>			1 x FR 26.12VARS 1SBN102422R1000 (IP 65 plastic)
26	415	11	1SBL 24 1001 R8 <input type="checkbox"/> 10			
17	690	15	(*13" - "14" hold-in)			
32	380-400	15	1 x A 30-30-10 <input type="checkbox"/>			1 x FR 30.12VARS 1SBN102822R1000 (IP 65 plastic)
32	415	15	1SBL 28 1001 R8 <input type="checkbox"/> 10			
21	690	18.5	(*13" - "14" hold-in)			
37	380-400	18.5	1 x A 40-30-10 <input type="checkbox"/>	1 x CB5-10	1 x TA 42 DU <input type="checkbox"/>	1 x FR 40.12VARS 1SBN103222R1000 (IP 65 plastic)
37	415	18.5	1SBL 32 1001 R8 <input type="checkbox"/> 10	1SBN 01 0013 R1010	1SAZ 31 1201 R10 <input type="checkbox"/> <input type="checkbox"/>	
25	690	22	(*13" - "14" hold-in)			
50	380-400	22	1 x A 50-30-00 <input type="checkbox"/>			1 x FE50.12VARS FPTN372206R0025 (IP 55 sheet metal)
50	415	25	1SBL 35 1001 R8 <input type="checkbox"/> 00			
35	690	30	plus hold-in contact: 1 x CA5-10 1SBN 01 0010 R1010			
65	380-400	30	1 x A 63-30-00 <input type="checkbox"/>	1 x CB5-10	1 x TA 75 DU <input type="checkbox"/>	1 x FE75.12VARS FPTN372208R0019 (IP 55 sheet metal)
65	415	37	1SBL 37 1001 R8 <input type="checkbox"/> 00	1SBN 01 0013 R1010	1SAZ 32 1201 R10 <input type="checkbox"/> <input type="checkbox"/>	
43	690	37	plus hold-in contact: 1 x CA5-10 1SBN 01 0010 R1010			
75	380-400	37	1 x A 75-30-00 <input type="checkbox"/>			
72	415	40	1SBL 41 1001 R8 <input type="checkbox"/> 00			
46	690	40	plus hold-in contact: 1 x CA5-10 1SBN 01 0010 R1010			
96	380-400	45	1 x A 95-30-00 <input type="checkbox"/>			1 x FE110-12VARS 1SFN104333R1000 (IP 66 sheet metal)
96	415	55	1SFL 43 1001 R8 <input type="checkbox"/> 00		1 x TA 80 DU <input type="checkbox"/>	
65	690	55	plus hold-in contact: 1 x CA5-10 1SBN 01 0010 R1010		1SAZ 33 1201 R10 <input type="checkbox"/> <input type="checkbox"/>	
110	380-400	55	1 x A 110-30-00 <input type="checkbox"/>	-	or	
110	415	59	1SFL 45 1001 R8 <input type="checkbox"/> 00		1 x TA 110 DU <input type="checkbox"/>	
82	690	75	plus hold-in contact: 1 x CA5-10 1SBN 01 0010 R1010		1SAZ 41 1201 R10 <input type="checkbox"/> <input type="checkbox"/>	

* Ambient temperature around the starter enclosure ≤ 40°C

Cabling accessories (see page 7/5 for ordering details)

>> Accessories page 7/4	>> Wiring diagrams page 7/6
>> Factory-assembled starters page 7/1	>> Dimensions of assembled starters page 7/8